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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------|------------------|
| 10/715,226 | 11/17/2003 | Rakesh Vig | VTI-114.9B(CIP) | 5025 |
| 909 | 7590 | 08/05/2005 | EXAMINER HABTE, KAHSAI | |
| PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102 | | | ART UNIT 1624 | PAPER NUMBER |

DATE MAILED: 08/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|----------------------------------|----------------------------|--|
| Office Action Summary | Application No. 10/715,226 | Applicant(s) VIG ET AL. | |
| | Examiner Kahsay Habte, Ph. D. | Art Unit 1624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) 3, 5 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 7 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7 are pending in this application.

Election/Restriction

2. Applicant's election with traverse of Group I, Claims 1-2, 4 and 7 filed 07/21/2005 acknowledged. Since Groups I and II are almost similar process except the presence of copper, the examiner would search Groups I and II together. The new restriction requirement is:

- I. Claims 1-2, 4 (in part) and 7 (in part), drawn to a method of synthesizing [7-(dipropylamino)phenothiazin-3-ylidene]dipropylamino that comprises a reaction of phenothiazine with dipropyl amine in the presence of bromine or copper, classified for example in class 544, subclass 36 and 37.
- II. Claims 3 and 4 (in part), drawn to a method of synthesizing [7-(dipropylamino)phenothiazin-3-ylidene]dipropylamino that comprises (a) acetylating the ring nitrogen of 3,7-dinitrophenothiazine, (b) reduction of (a), (c) alkylation of (b), classified for example in class 544, subclass 36 and 37.
- III. Claims 4 (in part) and 5, drawn to a method of synthesizing [7-(dipropylamino)phenothiazin-3-ylidene]dipropylamino that comprises the step of reacting 4(-aminophenyl)dipropylamine with [2-amino-5-(dipropylamino)phenyl]thiosulfonic acid, classified for example in class 544, subclass 37 and in class 564, subclass various.

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- IV. Claims 4 (in part) and 6, drawn to method of synthesizing [7-(dipropylamino)phenothiazin-3-ylidene]dipropylamino that comprises the step of reacting the (4-[[4-(dipropylamino)phenyl]amino]phenyl)dipropylamine with S, I₂ and DCB, classified for example in class 544, subclass 37 and in class 564, subclass various.

Applicants traverse the restriction requirement and the traversal is on the ground(s) that:

a. "Election of species to be for initial examination purpose only and not a requirement to restrict the scope of the generic and subgeneric claims". The examiner disagrees with applicants. This restriction requirement is not an election of species, but a restriction of the inventions into five groups based on the fact that the inventions are independent and distinct one from the other as set forth in the restriction requirement.

b. "Restriction is proper if the restricted inventions are independent and patentably distinct and there is serious burden placed on an Examiner....no adequate reasons and /or examples have been provided to support a conclusion of patentable distinctness....and that no serious burden is placed on the Examiner". The examiner disagrees with applicants. New Groups I-IV are drawn to different processes and they are patentably distinct one from the other (see restriction requirement). New Groups I-IV involve different synthetic techniques including different type of reagents. The classification of the phenothiazines is in class 544, but that does not mean all inventions drawn to phenothiazines are patentably not distinct one from the other.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claim 4 is objected to because of the following informalities: the nomenclature "pheno-thiazine" should read as "phenothiazine". Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mellish et al. (*Photochemistry and Photobiology*, 2002, 75(4): 392-397). Cited reference teaches the synthesis of N3,N3,N7,N7-Tetra-n-propyl-3,7-diaminophenothiazine-5-ium iodide at page 396 (see compound 3, R =C₃H₇). Claims 2

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and 7 are rejected because the presence of the copper is optional. The instant invention differs from the prior art in that the synthesis of [7-dipropylamino)phenothiazien-3-ylidene]dipropylamine in the instant claim 1 involves the reaction of phenothiazine in the presence of bromine. The prior art uses iodine instead. Since iodine and bromine are halogens and can be used alternatively, it would have been obvious to the skilled in the art at the time of the invention was made to change the iodine to bromine since it is expected that bromine and iodine to react almost the same way.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kahsay Habte, Ph. D. whose telephone number is (571) 272-0667. The examiner can normally be reached on M-F (9.00AM- 5:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Wilson (Acting SPE) can be reached at (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Kahsay Habte', is positioned above the printed name.

Kahsay Habte, Ph. D.
Patent Examiner
Art Unit 1624

KH
August 3, 2005